



Performance evaluation of well irrigation under tank command area

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SUMMARY

This study was taken under to verify the efficiency and efficacy of usage of ground water for irrigation that has been practiced in the farmer's field. The tank command area located near Mandalageri village in Raichur district was selected as there are many farmers who practice well irrigation and use the tank water for recharging of wells. The selected farmers in the project were typically growing traditional crop namely paddy along with light irrigated crops like sunflower, and cotton. The quantity of water being irrigated per irrigation period of pumping, application losses as well as scheduling that they follow were observed and recorded. The water production efficiencies for each of the farmer were compared with the estimated gross irrigation requirement. The study shows that excessive irrigation was practiced by the farmers as they were not measuring the irrigation quantity. This is leading not only to excessive irrigation but also to additional burden on power requirement. Hence, suitable measuring devices namely H flumes, RBC flumes need to be inducted to help apply irrigation water with better efficiency.

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Indian agriculture mainly depends on the monsoon rains that received during June to September with average annual rainfall of about 1150mm, but it is unevenly distributed and erratic. Water thus stored either in the surface reservoir or in aquifer is used for the major purpose of irrigation during frequent dry spells in the rainy season and also for protective irrigation in winter and summer season. Today, the gross irrigated area from surface and ground water has reached to 97 M ha from 22.6 M ha in 1951 (Sivanappan, 2000). The rate of increase in irrigated area on an average was 2.1 M ha per year during the sixth plan period and 3.1 M ha per year during the 10th plan period. Apart from major and medium irrigation projects, minor irrigation projects have been contributing sustainably to irrigation potential through ground water development.

Tank irrigation:

The tank irrigation system in India has a long history means of land and water management for enhanced and sustained productivity. In south India, the tank irrigation

system has received greater importance because of morphological advantages and ephemeral nature of runoff availability. Among three states of south India (Karnataka, Andhra Pradesh and Tamilnadu) Karnataka states consists of 36672 tanks of varied sizes with an irrigation potential of about 0.65 M ha spread over 27 districts. However, the actual area under irrigation is estimated to be 0.24 M ha. The area irrigated by tanks increased from 3.5 m ha in the 1945-1950 to over 4.5 M ha in 1960-70 which decreased subsequently to less than 4 M ha since 1973. Further, it was only 3.3 M ha in 1998-89, due to lack of proper rehabilitation and improper command area management. There is need to rehabilitate the existing tanks so as to improve their storage potential, reduce the sediment load. At the same time, it is equally important to utilize the water carefully crop demand and recharge the ground water to maximum extent. Under the crop command areas, ground water needs to be augmented with rainfall during *Kharif* season and tank water in *Rabi* season.

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